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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,842	08/22/2002	Craig E. Burch	201-1581	3123
28787	7590	04/23/2004	EXAMINER	
DYKEMA GOSSETT PLLC 39577 WOODWARD AVENUE SUITE 300 BLOOMFIELD HILLS, MI 48304			ESHETE, ZELALEM	
		ART UNIT	PAPER NUMBER	3748

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/064,842	BURCH ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Zelalem Eshete	3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 25 March 2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-20 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

This office action is in response to the amendment filed on 03/25/2003.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3,8,13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendriksma et al. (6,591,798).

Regarding claims 1,8: Hendriksma discloses a "camshaft bearing ladder" and a method (see figure 3), comprising: a first body with an aperture to facilitate threaded connection of the body to a cylinder head (see numeral 94) with a cut out for receivingly mounting a cam shaft (see numerals 90,92), the first body also having a pocket (see numeral 87); and a solenoid actuator (see numeral 86) positioned within the pocket for activating a switchable rocker arm assembly (see figure 1; column 3, line 65 to column 4, line 2; column 5, lines 16 to 18).

Hendriksma discloses the claimed invention except for integrating the body for the camshaft bearings and the body with solenoid pocket. It would have been obvious to one having ordinary skill in the art at the time the invention was made to integrate the

elements into one body, since it has been held that constructing a formerly various elements into an integral structure involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Regarding claim 2: Hendriksma discloses a plurality of solenoid actuators (see figures 2,3).

Regarding claim 13: Hendriksma discloses the claimed invention as cited above for rejection of claims 1 and 8 above; and further discloses the actuator system to be used in internal combustion engine which inherently comprises a combustion chamber; a head with a passageway (air passageways) fluidly connected with the chamber, and a valve (valves) controlling fluid communication between the chamber and the passageway (passageways). He also discloses a rocker arm for actuating for actuating the valve (see numeral 16), the rocker arm having first and second modes of operation of the valve (see numerals 32 and 38); the solenoid actuator for actuating the rocker arm between the first and second modes of operation (see column 5, lines 43 to 45).

Regarding claim 14: Hendriksma discloses the bearing cap ladder that is connected with a second solenoid, which actuates a second rocker arm assembly (see figure 3).

Regarding claim 16: Hendricksma discloses the second solenoid actuates a rocker arm assembly actuated by a cam shaft common with other rocker arm assembly (see figures 3,4).

Regarding claims 3,15: Hendriksma discloses the claimed invention except it fails to disclose a plurality of cutouts for receiving a plurality of camshafts.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the design principle that is disclosed for a singular cutout/camshaft to a plurality of cutouts/camshafts, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

*St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.*

1. Claims 4,9,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendriksma (6,591,798) in view of Jahr (6,318,318).

Hendricksma discloses the claimed invention except it lacks the specification of the solenoid actuator being encapsulated by a polymeric material or epoxy resin.

However, Jahr discloses a core protected by a polymeric plastic encapsulation (see column 5, lines 19-22).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the solenoid of Hendricksma by encapsulating it with a polymeric material as taught by Jahr in order to protect the solenoid. It would also have

been obvious to choose epoxy resin for it is a strong material as is known by one having ordinary skill in the art.

2. Claims 5-7,11,12,17-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Hendriksma (6,591,798) in view of Yoeda et al. (6,405,693).

Regarding claims 5-7,11,12,17-19: Hendriksma discloses the claimed invention as recited for rejection of claims 1,9,13,14 above and; further discloses the use of an electrically actuated solenoid to actuate the valve mechanism that is placed within the cavity of the "cap ladder" (see numerals 10,86; column 5, lines 17 to 19).

Hendriksma fails to disclose the solenoid with leads "sealably connected" (pass through connector passing through a cam cover) that is connected with an integrated circuit board (encapsulated) or "printed circuit board" connected with the bearing cap ladder.

However, Yoeda discloses a control mechanism for controlling valve of internal combustion engine (see figure 4) that shows the use of solenoid (see numerals 30,31) in connection with driving circuit (see numerals 30b,31b) that is controlled by the external output circuit (see numeral 406) of the ECU (see numeral 20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to devise a controller by implementing the circuit connections with the solenoid as taught by Yoeda; for the electrically actuated solenoid in order to energize the solenoid as taught by Hendriksma. It would also have been obvious at the

time the invention was made to use pass through connector or "sealed connection" or "encapsulation" by passing through the cam cover in order to protect the electrical wires that connect the solenoid (within the cam cover) with the electronic circuits (outside the cam cover) for one having ordinary skill in the art.

Regarding claim 20: Hendriksma in view of Yoeda discloses the claimed invention as recited above, and Hendriksma further discloses an internal combustion engine which inherently comprise a combustion chamber, a head with an air passageways fluidly connected with the chamber; first and second valves (see figure 1, numeral 12) (hence first and second air passageways fluidly connected with the chamber); first and second rocker arms for actuating the first and second valves (see figure 1, numeral 16); the rocker arms having first and second modes of operation (see numeral 32,38); a cam shaft rotatably connected to the head by a "bearing cap ladder". With regard to first and second cam shafts, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the design principle that is disclosed for a singular cutout/camshaft to a plurality (first & second) of cutouts/camshafts, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

***Response to Arguments***

3. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (703) 306-4239. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

Zelalem Eshete  
Examiner  
Art Unit 3748

*Thomas Denion*  
THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
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